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EDITORIAL COMMENT

Well good readers and friends, as some of you may have heard your publisher had a run in with the surgeon's knife and the hospital the last week of July, just when the the August issue was being shipped. A triple-a-bypass, sounds like a car club route map doesn't it, was performed on the artery below the heart and leading into both legs. The operation so far as all are concerned, was a success and after a few weeks of recovery (taking it easy at home) all should be back to normal at CN80.

Associate publisher Ron Gatlin and Lynn Quealy, our girl friday and order fulfillment person, have done a magnificent job in our absence. It takes a lot of detail work to run even a small company like ours, and there are times that some of the departmental type operation details are known to only one person. When that person is missing it takes time for the people remaining to get the answers to items that they are not familiar with.

We certainly appreciate all the patience our readers have shown if some of the orders were a little bit delayed or mixed up through this period.

We have extended our nine pin printer special price beyond September 15th, to October 15. If you have been considering a new printer the Seikosha SP-2400 for \$169 is the same as the Radio Shack DMP 135 and will operate with any TRS-80 computer or IBM PC clone. If you require drivers for SuperScripsit or Scripsit Pro we will provide these upon request for free when you purchase your printer. A perfect back to school gift.



FORMATTED DOT-MATRIX PRINTING

by David Goben

INTRODUCTION

This article documents two programs which will be included on the next Disk Series disk from CN80. The programs are FMTprt9/CMD and FMTprt24/CMD. FMTprt9 is for use on a 9-pin printer, and FMTprt24 is for 24-pin printers. Further, The programs are designed for the Model 4 (Model I/III versions =may= become available if enough people request it), and your printers must either be Epson compatible, or have an Epson mode. If it has an Epson mode, it must be selected via a hardware switch on the printer. To take full advantage of these programs, the printer must also be in its initial power-up mode, meaning that no possible front-panel selections have been made. Therefore to ensure this, simply turn the printer on and start using the programs. Lastly, it is expected that you have continuous, or fan-fold paper installed on your printer. FMTprt makes no attempt at pausing between pages.

The FMTprt programs offer you 49 different options, with which you can select almost any feature available on your printer. Depending on your printer, you may not be able to use some of them, as feature support may not be present. Unlike most word processing programs, the FMTprt programs use the programmable power of the printer itself to provide its many features, rather than process them itself. As such FMTprt is small, and can even be run from BASIC or a DOS call from within another program. For the best results, your 9-pin printers should be at =least= FX-80 compatible, though best results will be provided if it is compatible with either an LX-series printer (best choice!), or any of the newer models of the last couple of years. The Seikosha SP-2000 and SP-2400 are good examples of LX-compatible printers (the SP-2400 is currently available from CN80). 24-pin printers should be compatible with at least the LQ-800 or LQ-850, or any more recent. The Seikosha SL-90 is a good example of an LQ-850 compatible printer, which is also available from CN80.

While reading this article/documentation, you should have your printer manual available to check features as they are

described here. By referring to each FMTprt command in your printer's CONTROL CODES or PRINTER COMMANDS section (or a similar title) will tell you if a command can be supported by your printer. As the saying goes, if a command is not supported, you are out of luck in using it.

Although the programs are provided free to you on the Disk Series, they are still Copyrighted by me, and so you cannot place them on any other medium for distribution in any form through =any= medium except with express written permission from me. Nuff said.

USING FMTprt

To use FMTprt, you must have an ASCII text file to use it with. An ASCII text file can be created using TED, EDIT-4 (from CN80), SCRIPT (from CN80), Scipsit, or any other text processor or word processor which can save its files in ASCII format.

Although lines can be of any length, when you terminate a line, it must be done via a Carriage Return (the ENTER key). Other codes, such as the "End Paragraph" code in Scipsit and Script will not be properly interpreted.

Supposing that you already have a text file called MYFILE/TXT. You would turn your printer on, and then enter the command:

```
FMTprt MYFILE/TXT
```

or

```
FMTprt MYFILE
```

Be sure to replace FMTprt with FMTprt9 or FMTprt24 as needed (or simply rename the appropriate program to FMTprt/CMD). Note that a /TXT extension is the default extension, and so you will not need to supply one if that is the extension of your files. If you have any other extension, such as /ASC, then you must supply it. If your text file =does not= have an extension, then you must enter the filename with a trailing "/". Such as:

```
FMTprt MYFILE/
```

if your file was simply called MYFILE.

When FMTPTT prepares to send data to your printer, it does so by first resetting your printer, selecting Near Letter Quality, selects the Times Roman (or plain Roman) font, and selects the Elite pitch (12 character per inch monospaced). Further, the page length will default to 66-lines, with a 3-line top and bottom margin (1-inch skip-over -- 6 lines), and set to 6 lines per inch.

When you begin using FMTPTT, be sure that the paper is positioned at the point that printed text will begin. Thus if you will have top and bottom margins (the space difference between the page length in lines and the line count -- number of printed lines per page), you should set the printer head at the position on the paper where printed text will initially begin.

USING FMTPTT COMMANDS

The commands available to FMTPTT are accessed by using a 2-character command code preceded by a backslash "\" character. This character was selected because it is one of the least-used codes on the Model 4. It is produced by holding the CLEAR key down and tapping the slash key "/". Under SCRIPT, it is produced by holding the CNTRL key down and tapping the "F" key. For example, to select condensed mode, the CO command, you would place \CO at the point in your text file where you want condensed print to start (you would also place this command where you want it to end, as well).

FMTPTT COMMANDS

The commands listed here will be made in alphabetical order. Examples will be made where appropriate. Remember, each command is entered into your text file by preceding each with a backslash "\" character. Invalid commands will be ignored.

Two special commands are worth noting, which differ from the other commands:

\ Ending a line with a backslash character (immediately followed by a carriage return) is interpreted by FMTPTT as simple a SPACE code. This may be handy when you are using a simple text processor which does not allow line wrap-around. This way you can use that editor and still provide text will wrap-around capabilities (words wrap around to the start of the next line).

\ Ending a line with this command (or technically, =any= 1-character command, which are invalid), immediately followed by a carriage return causes FMTPTT to ignore the carriage return and assume that the line continues uninterrupted on the next line. This command differs from the previous in that no space is inserted. This command is handy when setting up a long line if initial commands. This allows you to separate them from the rest of the text. This is especially handy at the start of the file, where there is the best possibility of having a lot of set-up commands.

The other command all have 2-character sequences, which can be entered in either lower case or upper case. Some command also require parameters. These will be noted as needed. Parameters are entered by immediately following the command with the parameter enclosed within parentheses (). If a list of parameters is required, then each parameter will be separated by a comma. Note that if a list of parameters is required, after a comma you can place a carriage return to start more parameters on the next line. This may be handy when you have a long list of parameters, such as graphics data).

In alphabetical order, the standard commands are:

BA -- BACKSPACE
CO -- CONDENSED
CS -- CHARACTER SET
DH -- DOUBLE HEIGHT
DR -- DRAFT MODE
DS -- DOUBLE STRIKE
DW -- DOUBLE WIDE
EL -- ELITE
EM -- EMPHASIZED
F0 -- FONT 0
F1 -- FONT 1
F2 -- FONT 2
F3 -- FONT 3
F4 -- FONT 4
F5 -- FONT 5
F6 -- FONT 6
F7 -- FONT 7
F8 -- FONT 8
F9 -- FONT 9
FF -- FORM FEED
GR -- SEND GRAPHICS DATA
IT -- ITALICS
JL -- JUSTIFY LEFT
JR -- JUSTIFY RIGHT

JC -- JUSTIFY CENTER
 JA -- JUSTIFY ALL
 L6 -- 6 LPI
 L8 -- 8 LPI
 LC -- LINE COUNT
 LQ -- LETTER QUALITY
 LP -- 1-10 LINES PER INCH SET
 ML -- MARGIN LEFT
 MO -- SELECT GRAPHICS MODE
 MR -- MARGIN RIGHT
 PG -- PAGE EJECT
 PI -- PICA
 PL -- PAGE LENGTH
 PR -- PITCH PROPORTIONAL
 S0 -- STYLE OFF
 S1 -- OUTLINE
 S2 -- SHADOW
 S3 -- OUTLINE/SHADOW
 SB -- SUBSCRIPT
 SU -- SUPERScript
 TA -- TAB
 TS -- TAB SET
 UN -- UNDERLINE
 US -- USER-DEFINED CODE(S)

Following are detailed descriptions of these commands:

BA -- BACKSPACE. BA causes the printer head to back up one space, up to, but not beyond the left margin. This command is ignored if there is any printer-controlled text justification in effect. This could be used when you want to overstrike a character with another. By placing \BA immediately after the first character and immediately before the overstrike character, the second character will be printed upon the first character. This command simply issues the BS code.

for example: "b\BA/" will overstrike the lower case "b" with as slash "/".

CO -- CONDENSE. CO selects or deselects condensed print mode; if not active, it will be selected, and if active, it will be deselected.

CS -- CHARACTER SET. This command allows you to select the printer character for various countries. The default is whatever the switch settings are set for at start-up. You can specify a country code by enclosing it within parentheses. For example, if the country code for NORWAY is 9 (refer to the ESC R command in your manual to examine country codes), you would select it

within your text by entering "\CS(9)", less quotes.

DH -- DOUBLE HEIGHT. This command is supported by 24-pin printers. This command activates and deactivates double height printing. When active, characters will be printed twice as tall as normal. This uses the ESC w printer command.

DR -- DRAFT MODE. This command selects the draft mode, as opposed to Near Letter Quality. By default, the printer is initialized by FMTPrT to display text in NLQ mode. This command uses the ESC x 0 printer command.

DS -- DOUBLE STRIKE. This command selects and deselects the double strike mode. This command causes the printer to print each character twice in the same column position, the second slightly lower than the first. This command is not available in the NLQ mode. This command uses the ESC G and ESC H printer commands.

DW -- DOUBLE WIDE. This command selects and deselects the double wide mode. When active, each character is printed twice as wide as normal. This command uses the ESC W printer command.

EL -- ELITE. This command selects the Elite pitch monospace mode (12 characters per inch). This command uses the ESC M printer command.

EM -- EMPHASIZED. This command selects and deselects the emphasized mode. When active, each character is printed twice in the same column position, with the second printed only slightly to the right of the first. This command uses the ESC E and ESC F printer commands.

F0 - F9 -- FONT SELECT. This command selects a NLQ font. This command affects only the NLQ mode, not draft. Check your manual to see how many fonts are supported by your printer, if ANY. The SL-90 supports 9 (0-8), the SP-2400 supports 5, (0-4), and the Epson EX-800/1000 supports 2 (0-1). This command uses the ESC k command. The font number corresponds with the selection code in your printer manual.

GR -- GRAPHICS. This command allows you to send graphics information to the printer.

You should use the MO (mode) command first if you wish to set a different graphics mode than 60 dots per horizontal inch 8-pin graphics. FMTPTB bases its counts of graphics data on the mode set. You do not have to supply GR with a count, as it performs a count of data for you. This command uses the ESC * printer command.

For example, if you wanted to print the copyright symbol using the double density mode. The code for double density is 1, so the first command you would insert into your text would be "\MO(1)". The codes for a copyright symbol are 60, 66, 153, 165, 165, 129, 66, 60, and 0. Thus the next command s e n t w o u l d b e "\GR(60,66,153,165,165,129,66,60,0)". This will print the copyright symbol and then continue on with your normal text.

FF -- FORM FEED. This command ejects the current page and goes to the top of the next, ready for more printing. This command simply uses the printer's FF code.

IT -- ITALICS. This command selects and deselects the italics mode. Note that this mode is not supported for some NLQ fonts. Check the ESC 4 and ESC 5 codes in your printer manual to see how it affects your printer.

JA -- JUSTIFY ALL. This command tells the printer to justify the printed text evenly on the left and right margins. This command uses the ESC a 3 printer command. Most newer printers support this feature (not the FX-80).

JC -- JUSTIFY CENTER. This command tells the printer to center all lines of text. This command uses the ESC a 1 printer command.

JL -- JUSTIFY LEFT. This command tells the printer to print data flush left in "ragged right" format, the default mode. This command uses the ESC a 0 printer command.

JR -- JUSTIFY RIGHT. This command tells the printer to print data flush right in "ragged left" format. This command uses the ESC a 2 printer command.

L6 -- 6 LPI. This command tells the printer to print text in 6 lines per inch. This

command uses the ESC 2 printer command.

L8 -- 8 LPI. This command tells the printer to print text in 8 lines per inch. This command uses the ESC 0 printer command.

LC -- LINE COUNT. This command tells the printer how many printed lines to print per page versus the actual length in standard lines on the page. This command actually sets the printers skip-over perforation command by subtracting the provided line count from the page length, and using the printer's ESC N command to set the information. For example, to set 54 lines printer per page, you would insert the command "\LC(54)" less quotes within your text. This give the printer a 12-line skip-over when there are 66 lines per page (default). When a LC of zero is selected, skip-over is canceled via the printer's ESC O command.

LP -- LINES PER INCH. This command tells the printer to print 1 to 10 lines per inch. This command differs with the actual LC (line count) or PL (page length) command in that it will set vertical spacing between lines to accommodate the varied specifications. Thus, even though you may select 54 printed lines to a page, but you select 1 line to an inch, you will not have 54 actual lines printed on the page. This command uses the ESC 3 printer command.

LQ -- LETTER QUALITY. This command selects the Near Letter Quality mode. This command uses the ESC x 1 printer command.

ML -- MARGIN LEFT. This command allows you to set the left margin using the current pitch setting. Since FMTPTB sets the printer initially in the ELITE mode (12 characters per inch), then to print text 1 inch from the left margin, you would select a value of 12, as in "\ML(12)". Note that regardless of the pitch settings set afterward, that the left margin will remain at the same position, until you use the ML command again. This command uses the ESC l printer command.

MO -- GRAPHICS MODE. This command tells FMTPTB which graphics mode you wish to use with the GR (graphics) command. Refer to your printer manual under the ESC * command to see what mode codes can be used to select between the

various graphics modes.

MR -- MARGIN RIGHT. This command allows you to set the right margin using the current pitch setting. Since FMTPRT sets the printer initially in the ELITE mode (12 characters per inch), then to print text 1 inch from the right margin, you would select a value of 90 ($8.5" \times 12 = 102$. $102 - 12 = 90$), as in "\MR(90)". Note that regardless of the pitch settings set afterward, that the right margin will remain at the same position, until you use the MR command again. This command uses the ESC Q printer command.

PG -- PAGE. This command performs the same function as the FF command in that the page is ejected and printing resumes at the start of the next page.

PI -- PICA. This command selects the Pica pitch monospaced mode (10 characters per inch). This command uses the ESC P printer command.

PL -- PAGE LENGTH. This command sets the number of physical lines per page. The default setting is 66. If you have a different sized sheet, you may want to set it accordingly. For example, to set the page length to 24 lines, you would use the command "\PL(24)". This command uses the ESC C printer command.

PR -- PROPORTIONAL. This command selects the proportional space mode. Note that some 9-pin printers do not support proportional spaced modes. This command uses the ESC p command.

S0 -- STYLE 0. This command turns off fonts styling on 24-pin printers. This command uses the ESC q printer command.

S1 -- STYLE 1. This command turns on the outline style on 24-pin printers. Text will be printed in a "hollow" format. This is turned off by the S0 command. This command uses the ESC q printer command.

S2 -- STYLE 2. This command turns on the shadow style on 24-pin printers. Text will be printed in a "shadow" format, where a shadow image of the character is displayed. This command is turned off by the S0 command. This command uses the ESC q printer command.

S3 -- STYLE 3. This command turns on both the outline AND shadow style on 24-pin printers. Text will be printed in a "hollow" and "shadow" format. This is turned off by the S0 command. This command uses the ESC q printer command.

SB -- SUBSCRIPT. This command selects and deselects subscripting. This command uses the ESC S 1 and ESC T printer command.

SU -- SUPERSCRIPT. This command selects and deselects superscripting. This command uses the ESC S 0 and ESC T printer commands.

TA -- TAB. This command simply issues a TAB code (9) to the printer. Although many text processors allow you to type in tab codes, some do not. This command allows you to use them regardless.

TS -- TAB SET. This command allows you to set horizontal tab positions on the printer, so that tab codes sent to the printer will cause advances from the current print position to the next selected tab position rightward. For example, to set tabs at positions 8, 16, 24, and 32, you would insert the command "\TS(8,16,24,32)" within your text. This command uses the ESC D printer command.

UN -- UNDERLINE. This command selects and deselects underlining on the printer. This command uses the ESC - printer command.

US -- USER CODES. This command allows you to send out special codes to the printer. You can send out any number, from one to whatever. You can even use the command to select features on your printer not supported by FMTPRT. You simply enclose the list of parameters in parentheses, separating individual parameters with commas. This command can be useful for printing special printer graphics codes, such as the line drawing codes used by the Extended Epson Character set (sometimes called the IBM character set).

CONCLUSION

Feel free to experiment with these features. Also be sure to keep a copy of your printer manual handy for reference to these features. A lot of experimentation may be needed to become proficient with them.

When something does not seem to work, check your manual to see if it is supported, and uses the codes reported in this article. Even I had a lot of trouble setting up a "perfect" document the first time (and I wrote the program). Guess I had trouble following my own instructions. Happy computing!

-David Goben

PATCH TO HYPERCROSS

by David P. Miller

A recent letter from D. B. of Brent, Alabama (Vol. 5, Number 8, August 1992 issue) requested information on Hypercross (SX3PCM4). Specifically, the program was giving the "No disk in drive or drive door open" error message even though this was not the case. Your answer, suggesting the setting of the drive select delay to a higher value, would have worked fine with any TRS-80 program that used TRS-80 diskettes, but does not necessarily apply to a program such as Hypercross.

Because the facilities of LDOS, TRSDOS and LS-DOS are designed to work with diskettes in TRS-80 format, they will not work with the formats of other DOS systems. This requires the author of conversion programs to completely bypass the operating system and directly control the floppy disk controller (FDC). While some software authors may take advantage of the information provided by the TRS-80 operating system, it is not safe to assume that this has been done. The fact that Hypercross always steps at 40ms regardless of the settings initiated by the SYSTEM command indicates that this program uses little or no information provided by the native operating system.

Checking to see if a diskette is present and loaded properly is accomplished by issuing a 'select' command to the FDC, wait for the index hole to be detected, and wait for the index hole detection to disappear. This tells the program that a diskette is indeed spinning in the drive. The problem with Hypercross is that the original versions were written for slower computers (Model

I=1.77mhz, Model III=2mhz) and the faster speeds of the Model 4 (with or without speedup modifications) were not allowed for. A more effective means of making the program work properly would be by using the command "SYSTEM (SLOW)" before starting Hypercross and "SYSTEM (FAST)" after the 'alien' diskettes had been read or written to.

Hypercross version 2.0B tests for 'toggling' of the index hole sensor 30,720 times before giving up and reporting a missing diskette. My experience in writing conversion programs indicates that at least 40,960 scans must be made on the Model 4 to allow reliable detection of this 'toggling'.

-David P. Miller

A VISIT WITH DAVID GOBEN

by David Goben

Hey, folks! This column will be short this month so that I will have room to document two bonus programs I'm placing on CN80's Disk Series, which =may= be upgraded from time to time if substantial features are added. The programs are for the Model 4 (Model I/III versions will come if more than a handful of people request it), and they support Epson Compatible 9-pin and 24-pin printers. They allow you to take full advantage of your printer, using all of its features. All you have to do is create an ASCII text file, include any easy to use printer formatting commands you wish, and run the file through the programs. Depending upon your printer's capabilities, you can choose from 49 different commands, from font and style selections, to printing graphics right within your text, set page margins, lines per inch, pitch, set tab stops, select between the fonts available for your printer, and so on. This is kind of like using ALLWRITE. Of course you will have to use your own text processor, such as TED, Mark Reed's EDIT-4, or even SCRIPT, to create the ASCII text files. See the table of contents of this issue to find the FORMATTED DOT-MATRIX PRINTING article!

HI-RES FIXIN'S

A recent letter from a reader had me jumping into my toolbox again. The user of my Hi-Res Utilities Package reported that trying to print a Hi-Res file using HRFXPRT without a Hi-Res board would not work, contrary to what I have been saying. (Oops!)

I checked my code and all appeared OK until I noticed that after the file was loaded and properly reinterpreted, that the program still tried to read the Hi-Res board. When one is not present, then the codes for black data is read, since there is nothing actually stored "through" the Hi-Res ports. Thus even though a file is properly loaded and stored in memory, an attempt to read the Hi-Res board wipes out the properly formatted memory-stored image.

The fix is easy enough, for version 1.2 of HRFXPRT/CMD, apply the following patch:

PATCH HRFXPRT (x'27AF'=C4)

For HRLSRPRT/CMD version 1.2, use this patch:

PATCH HRLSRPRT (X'273C'=C4)

Sorry about that, folks. You keep me on my toes. Thanks!

POSTMASTER 24

No, folks, POSTMASTER 24 is =not= a new version of David Miller's POSTMASTER program. POSTMASTER 24 is a utility program which must be used =with= POSTMASTER. Thus, therefore, and all that, you must also own POSTMASTER in order to use POSTMASTER 24.

POSTMASTER 24 is a program which installs a small printer filter and then executes the POSTMASTER program. What POSTMASTER 24 does is converts the printer output to a format which is better suited to 24-pin Epson-compatible printers, such as the truly excellent Seikosha SL-90 available from CN80. This program properly proportions the output so that the printout on a 24-pin printer will not be out of sync with the printout from a 9-pin printer, for which the data is intended. Because in the 8-pin graphics mode of the 9-pin printers, pin spacing is at 1/72", and this gap is 1/60"

on the 24-pin printers (these printers use every 3rd pin to emulate 8-pin graphics), a printout in the 8-pin graphics mode on a 24-pin printer tends to drag out, and can be a major pain when doing full page graphics, or even a series of a few short address labels from POSTMASTER. Plus, because the pins are smaller, =and= only every 3rd pin is used, the printout quality suffers. POSTMASTER 24 fixes all this by taking =full= advantage of the 24-pin features, and in the process produces laser-quality printouts which you have to see to believe that they actually came from a dot-matrix printer.

If you have a 24-pin printer which is Epson-compatible, or has an Epson mode, and you use POSTMASTER, then POSTMASTER 24 is an =essential= investment (and not just because I wrote PM 24, either). It solves all the PM headaches you would otherwise have with an Epson 24-pin printer.

By the way, this is not to say the Epson type 24-pin printers are bad. No way! Rather, be it said that their printer support language and features far outshines other 24-pin printers, such as NEC and DMP.

USPS BAR CODES (round 2)

Program listing 1 is a new version of my ZIPCODE BARCODE WRITER program first presented in CN80 Vol 5 No 5; May 1992. This program, called ZIPCD9/BAS, is for 9-pin printers. It prints the United States Postal Service barcode below the individual's address block. This barcode is readable by the USPS optical character reader (OCR) and/or a barcode sorter (BCS). Businesses can save a lot of money by having their bulk mail pre-coded, because by doing it, the postal service do not have to pay someone else to do it, and so can pass this savings on to you. Check with your local Post Office if you are interested in doing this, and they can give you all the details on what they will need in order to process your bulk mail in this fashion.

The nice thing about this version is that you can now use individual envelopes with your Dot-Matrix printer. This version works with both Epson and Proprinter 9-pin printers.

Program Listing 2, ZIPCD24/BAS, works with Epson-compatible 24-pin printers.

Please refer to my article in the May 1992 CN80, pages 10-11, for full details on using the programs. It is recent enough to not need rehashing here. By the way, the laser printer version has not been updated because the changes it would require are not substantial enough.

SYMPHONY 90

I will begin a tutorial series on Symphony 90 soon, so if you want to take advantage of it, and don't yet have the Symphony 90 hardware or software, you may want to start looking into it. Transcribing music is not as difficult as it looks, and you don't have to be a music major to do it (look at me).

That's all for this month. See you later, buckaroos!

-David Goblen

ANSI-TERM 4

by Richard VanHouten, author of ANSI-Term4.

Hi! Stan's been asking me to write something ever since I sent him ANSI-Term 4, so here goes.

What is ANSI-Term 4 anyway?

Well, it's a communications program. A communications program is a program that allows one computer to communicate with another computer, whether it is in the same room, across town, across the country, or around the world. All you need is a null-modem adapter (for a hookup in the same room) or a modem (for a longer distance hookup through the phone lines).

What is special about ANSI-Term 4? Why should I buy it rather than use XT4 or FastTerm?

What's special about ANSI-Term 4 is its use of the hi-res graphics screen to do such things as:

(1) Display text on 30 lines of 80 characters, with the bottom 2 lines being

reserved for a status bar. This would be impossible without the use of the hi-res board.

(2) Display text using a custom character set designed to resemble the IBM PC character set. You could replace your character generator ROM with one that has the PC character set on it, but with ANSI-Term 4 you don't have to open up your computer (provided you already have the Hi-Res board installed, of course).

(3) Control the screen using escape sequences derived from ANSI standard x3.64, or the VT100 extension to that standard. FastTerm has a VT100 emulation mode, but it leaves something to be desired in comparison to ANSI-Term 4. XT4 has no ability to cope with ANSI escape sequences. These escape sequences do such things as position the cursor, clearing all or part of a screen or line, or changing colors. ANSI-Term 4 can't do much about the screen color, but it can set underscore mode or reverse video mode if the proper code is received... and it can display ANY printable character in reverse video, not just those below 128, as the text mode reverse video does.

(4) Control the screen using AVATAR control sequences. AVATAR (Advanced Video Attribute Terminal Assembler and Recreator) is a set of control codes designed to be faster than ANSI codes are, and is in use by some BBS's. To the best of my knowledge, ANSI-Term 4 is the ONLY TRS-80 terminal program to support AVATAR.

(5) File transfers via XModem, XModem 1k, and YModem transfer protocols. I'm also working on adding ZModem to ANSI-Term 4, but that may take a while yet (the code is written, but the debugging is giving me a rough time). XT4 only supports XModem. FastTerm supports XModem, XModem 1k, and YModem.

(6) Automatic dialing. ANSI-Term 4 supports up to 100 different entries in its dialing directory.

(7) Macros. ANSI-Term 4 supports up to 10 macros, in addition to any you may have defined using KSM/FLT.

(8) Support for up to 19,200 bps (the maximum speed the UART our machines use can handle), with reliable file transfers at that speed. With high speed modems steadily dropping in price, it's nice to know you have the option. FastTerm lets you select 19,200 bps, but can't receive reliably at that speed.

XT4 lets you select 19200 (this is undocumented, the choices given go only up to 9600), but again, it cannot receive reliably at that speed.

All this sounds great, right? Aren't there any weak points? Well, yes. The major weak point is scrolling speed. I've got the scrolling routine running as fast as I can possible make it go without using special features such as the Tandy hi-res board's hardware scrolling or an XLR8er's DMA channels, but it still slows down and falls behind the input at speeds of 2400 or above when scrolling. The best way to overcome this is to have the host computer send screen clearing codes after each screenful, if you have that option. If you can't do that, you won't lose characters right away, there is a 2k buffer on the input, which gives you at least a screenful after scrolling starts before you start to lose characters. Another weak point is snow on the Tandy hi-res board. It was either have snow or have an unacceptably slow display. There are also other features that the other terminal programs have that ANSI-Term 4 doesn't. In the end, you'll have to weigh for yourself whether the advantages I've listed above outweigh the disadvantages. To help you judge the graphics abilities, I have captured several snapshots of the opening screen as it is being drawn for inclusion in this issue. This is a typical animated ANSI screen, no special routines are being used that are not useable by a remote host computer. (See Illustrations, pg. 22)

-Richard VanHouten

IDIM 3.0 Bulletin Board Software Review by Harry C. Kight

It seems that software development for TRS-80 computers is still going on, and no end of it is in sight. New authors appear several times a year, and established long-time developers continue to produce outstanding new software. We owners of TRS-80s are very fortunate that these intrepid souls continue to explore the potential of older Tandy machines. One of the newer faces in TRS-80 software design is Leonard Lorden, author of the new IDIM

BBS for the TRS-80 Models 4/4D/4P.

Before I begin the discussion of this new software treat, I should tell you a little about myself. I've been a TRS-80 user since near the "beginning," in late 1976. At that time, I was working as a sales representative for Radio Shack in Tucson Arizona. Eventually, after several years, I ended up working at a Tandy Computer Center in central Arizona.

During all this time, I owned a succession of different TRS-80s, and was fascinated by them all. I currently own a Model 4P, a Model 16a, and a Model II. Over the years, I've been a Co-SysOp of several bulletin board systems including a Model 4 system running Mel Patrick's Fast-Plus BBS software. My own BBS, The DeadZone, began on a Kaypro 10 and now runs on a TRS-80 Model 4P with a 35-Megabyte hard disk. Although I left the employ of Tandy Corporation years ago, I continue to be a TRS-80 enthusiast.

That's enough about me. Let's talk about this exciting new BBS software which has just become available!

"IDIM" stands for "I Did It Myway," and Leonard accomplished just that. Dissatisfied with other BBS programs, he decided to write his own about three years ago. The software has been in a continuous state of development ever since, and this third incarnation is the most sophisticated and powerful BBS you will find in the TRS-80 world. If you look closely, though, you'll discover a few minor warts on this pretty face. Not to worry. None are cancerous, and most are hardly noticeable.

From The Users' Point of View

The most important considerations are how the users perceive the BBS and how easy and convenient it is to operate. In a world dominated by MSDOS BBS software with all its numerous complicated "Bells & Whistles," can IDIM successfully compete? In a word, yes! IDIM can carry a tune very well, thank you, and is very easy to use.

When a user first connects to IDIM, after a few seconds, the BBS tells him/her to hold down their spacebar. This allows the software to determine the caller's modem

speed and adjust itself accordingly. On future calls, the user can hold down the spacebar as soon as his/her modem connects, in order to speed the log-on process. (This is one of the "warts." IDIM can't determine the user's modem speed by itself because it doesn't understand any "Result Codes" sent to it by the BBS modem. I'm told that this shortcoming will possibly be removed in a future IDIM update.) This is not a serious problem because the "spacebar" message appears shortly after the user connects.

After connection, the BBS displays a welcome message (customizable) and asks the user to enter his/her name, user number, "Handle" (Alias), or "NEW." If the user is "NEW," the BBS asks a series of the usual questions in order to properly register the caller. One of the questions is **not** so usual, though, and represents one of IDIM's outstanding features. Not only is the user asked for his screen length (anywhere from 5 to 30 lines), but they are asked for their screen **width** (anywhere from 32 to 80 characters). IDIM automatically word-wraps all text to suit the user's screen, allowing users of older equipment (such as a 32-column Color Computer or a Model 100/102) to see everything on the BBS just as if it was written for their machine. This word-wrapping works in all areas of the BBS, including games, messages, file descriptions, "Chat," and "Help" screens. No other BBS software has this capability, as far as I know. Alas, as with most good things, there is a price to pay for such flexibility. IDIM is written in BASIC, so there is a tiny delay after each line of text is displayed. Most users won't even notice the small time-lag.

After the new user logs-on, they see another message (also customizable) telling them about the purpose of the BBS, rules & guidelines, suggestions for maximum results from its use, and any disclaimers the SysOp (System Operator) has included. If the new user agrees to abide by the rules the SysOp has established, they are invited to proceed and enter the BBS. If they don't agree to the rules, they are invited to hang up. If the new user chooses to hang up, the BBS will automatically remove their information from the user list, and delete the new account.

User Log-On to the BBS

If the new user agrees to the rules and continues on, here is what they see. (This is also what a registered user sees on subsequent calls after they enter their name and password.) After the caller's name and password have been verified, the BBS displays several lines of information including how many new messages have been posted since they last called, if they have private mail waiting for them, if there are any Chess players looking for a challenger (we'll get to the games in a moment...), if there is/are any Chess game(s) waiting for their move, and how much time they have each day and for this call. The BBS also notifies the user if someone has tried to log-on as him/her and has used the wrong password. If the SysOp has posted an "Auto-Message," it will also be displayed. An Auto-Message is generally some news about the BBS, or changes that have been made to it.

The Bulletin Menu

After successful log-on, the user is taken to the Bulletin Menu. This is the messaging system of the BBS. IDIM supports a number of "Sub-Boards" (message areas), and from this menu the user can <J>ump to any one of them or read all the new messages in all the Sub-Boards (<G>lobal Scan). IDIM requires at least two Sub-Boards: Private Mail and General Conversation, and can be configured with up to 20 different Sub-Boards. The user is initially placed in Sub-Board #2, which is the General Conversation area. From the Bulletin Menu you can also go to any of the other menus such as the Main Menu, Games Menu, File Transfer Menu, the Voting Booth, or the Help Menu.

Another unique feature of IDIM is its "Hot Menus." Each system menu has a name (listed in brackets above it). At any menu prompt, you can just type the name of the menu you wish to go to, even if it isn't listed on the current menu. Very nice.

The messaging system has all of the features you're probably used to, such as the ability to reply to any message, read just the new messages in a given Sub-Board, write a message to a particular user or to "ALL," etc. It works very well and is easy to use.

The Message Word-Processor

Here's another minor "wart." Because IDIM formats all text "on the fly" to suit the caller's screen characteristics, it requires some unusual "gyrations" if you want to format a message in a particular way. Most users won't have any problems because they'll just type in the text and let the system do what it wants with it. Several formatting key combinations are provided (and listed above the new message), so it won't take much time for a user to understand what's going on. On-line help for the messaging system is also available, of course.

Uploading and Downloading Files

IDIM supports up to forty different file areas, so it's possible for a SysOp to provide a great variety of files for the users and to create areas where he can encourage uploads from them. Both Xmodem-Checksum and Xmodem-CRC file transfer protocols are supported, courtesy of Mel Patrick. Rumor has it that additional protocols may be available in the future.

Users can download a file to their computer by just choosing the file's number, so there's no possibility of misspelling the filename and getting the wrong piece of software. Uploading a file is very easy, too. Once the upload is complete, the user can type in a description of the file which can be up to two lines of 80-column text. (The SysOp can also add a third comment line to the description, if he wishes to.)

All file areas are available to all registered users. IDIM has no way, at this time, to provide private file areas accessible only by designated users. This prevents a SysOp from, say, creating a exclusive file area for a local User Group which his BBS supports, or an adults-only file area which might contain material unsuitable for minors. On the plus side, this un-feature effectively prevents the BBS from becoming a "Pirate Board." IDIM has no file upload/download ratios that the users must adhere to.

I should mention that IDIM operates perfectly at modem speeds up to 9600 Baud. File transfers at these speeds are as fast as you'd expect, but text display "tops-out" at about 2400 Baud even if the modem speed is higher. This is because IDIM is written in BASIC, and the file transfer routines are

machine-language.

The Games

I know you've been waiting for this part of the review! For the online game aficionados out there: Yes, IDIM has "Doors." Translation for the rest of us: Several addictive games are available to users, with more to be available as upgrades to the software. All games either use text or ASCII graphics, so a user isn't required to have a computer that supports IBM-type ANSI graphics to play them.

The BBS software comes with five games, to start. These include Las Vegas style Video Poker, Nuke-War (your country challenges the aggressor), Master-Mind (a "Concentration" game), The Ongoing Story (an "endless" story which all the users can add to), and Chess (a multi-player version). Chess requires an 80-column display, so it's not available to users with narrower screen widths. (I hope Leonard will rewrite this game in the future, so it can be played by all users.) At logon, the user is told if he needs to make a move in one or more Chess games he is playing.

IDIM also has built-in capability to support a number of Role-Playing Games such as Dungeons & Dragons, if the SysOp chooses. This involves setting up a Sub-Board as an RPG, and allowing the players to post messages as themselves, their "Handle," their "Character" in the game, masquerade as another "Character," or anonymously.

The Voting Booth

This is an area of the BBS where users can express their opinions on various issues which the SysOp presents and changes from time to time. Users' votes are of the multiple-choice type. Both the total number of votes cast and the current percentage of responses for each choice are maintained for each voting topic. At logon, the user is notified if there are new voting topics available.

From the SysOp's Point of View

IDIM is very simple to set up, and an experienced SysOp can have a minimally-configured system up and running within thirty minutes. (No Joke!) The

manual is short and concise, covering everything in a step by step fashion. Even if you've never been a SysOp, you will be able to get your BBS "on the air" in just a few hours. It is assumed that you are familiar with your TRS-80 Model 4/4D/4P and either TRSDOS 6.x or LS-DOS 6.x. (These are the only two operating systems supported by IDIM.)

Almost Totally Automated

IDIM sports almost completely automatic operation once the system is set up. Daily maintenance routines are included in the software, and the SysOp chooses what time of day these will occur (usually in the "wee" hours of the morning). This maintenance takes only a few minutes each day, and requires no work from the SysOp.

The system maintains all the messages, removing them after a SysOp-determined number of days, and each message area can have a unique number of days to retain its messages. Games are also maintained automatically, requiring little work from the SysOp.

The most a SysOp generally ever has to do is to validate new users, assign them a privilege level, and choose which Sub-Boards they will have access to. He may want to include (and change) voting topics periodically, but this is not required. He may also, at his discretion, easily change all the "System Messages" such as the welcome screen, etc.

Keeps Track of BBS Traffic

If there is a printer connected to the system, IDIM can maintain a printed log of all BBS activity. This is useful because it tells the SysOp what areas of the BBS are popular, who is logging on and at what times, and if there have been illegal Log-on attempts. In the rare case of an error occurring in one of the BBS program modules, the log will also state which module produced the error and what line number it occurred in. Slick. If no printer is available or paper is in short supply, printer output can be routed to a text file and read or printed at the SysOp's leisure.

Very Little SysOp Maintenance

One of the nightmares that plagues most SysOps is the possibility of losing all the BBS messages due to a disk error and a corrupted file. This can't happen in IDIM because each message is a separate file. Most other BBS software stores all the messages in a single file, thus inviting disaster for the SysOp who doesn't remember to back the file up. You **will** want to backup the three files that contain the user list, though. You can either do this manually, or add a routine to the automatic daily maintenance.

Because each message is a separate file, your hard disk will become fragmented fairly often, slowing down BBS operation and inviting a corrupted disk directory to occur. Best to also include a weekly defragmenting routine in the BBS maintenance. If you're not a BASIC programmer, you can still do these precautionary things manually. It's a little more work, but well worth it!

Add Your Own Program Modules

Leonard has provided an easy way for a BASIC programmer to add his/her own program modules to the software. These might include additional maintenance routines such as disk defragmenting, or possibly adding more games or features to the BBS.

Professional Touches

The software includes an automatic "screen-blanker," so you'll never worry about screen phosphor "burn-in." The screen is only active while a user is logged-on to the BBS, and you'll see a summary of the user's information at the top of the screen while he's using the system. Either he or you can initiate a "Chat" (holding a "conversation" by typing back & forth) within specified hours. (The SysOp can **always** initiate a chat, at any time.)

If you wish, you can set up one or more users as "Co-SysOps" by increasing their access level. That way, they can validate users and "run" the BBS while you're on vacation. You can also give them remote access to DOS, if you want to, so they can do disk defragmenting, etc. Needless to say, you'd better **trust** the person you've given such access to! He could easily erase every

single file on your disks!

Another possibility is the creation of "Sub-Board SysOps." These are users to whom you've given control of a particular BBS message area. They have their own SysOp Menu (good for their Sub-Board only), and can decide who gets access to the message area, etc. This feature is valuable if you, for instance, support a local user group or club. This way they can have their own little BBS as a subset of your main BBS. Role-Playing Games, as mentioned earlier, can also be easily set up this way. IDIM has many other features, shortcuts, and professional touches--- too numerous to mention in this short review. Suffice it to say that you will be exploring IDIM's potential long after you first put your BBS on-line.

A Short Wish-List

Although IDIM is very easy to use, I think users would benefit if the author provided a User's Manual as a file for them to download, in addition to the help screens the BBS now offers. This way, new users could familiarize themselves with all of IDIM's power much faster.

Another thing I would like to see is support for network interaction with FIDO-Net and other popular networks, so users can send electronic mail worldwide, and monitor the various "Echoes" that are available. Such support might be impossible for IDIM due to its unusual message formatting, though. What the heck? This **is** a wish-list, isn't it?

The Bottom Line

Now we get to the "nitty-gritty." Is IDIM the BBS software you've been searching for? You'd better ask an additional question: "Do I have, or am I willing to invest in a hard disk drive?" With great power also comes great size. The software, as delivered, includes about ninety files totalling over 600K. You might get away with running it on a 64K floppy-only Model 4D with four drives, but by the time the BBS creates its datafiles you'll have room left for only a few messages-- and no file areas.

If you've got the necessary hardware muscle available, I think you'll like IDIM very much. I've replaced my old Kaypro-based BBS with IDIM and a Model 4P with a

35-Meg hard disk. I couldn't be happier! I'm getting new users at the rate of about four a week, more messages are posted more often, and people are enjoying the games (which I didn't have before), especially Multiplayer Chess which seems to be a major attraction.

Even if you only have a 5-Meg hard disk, you'll be able to set up a very nice BBS. You just won't have as much space for file areas. At \$80, IDIM is a true bargain, powerful enough to let your BBS effectively compete with all those "Gee-Whiz" IBM-type bulletin boards that plague Ma Bell's innards these days.

In short, I've grown to love IDIM's pretty face--- minor warts and all.

If you wish to see IDIM in action: Call The Dead Zone BBS (602) 884-4314, 8N1, 2400/1200/300 Baud, 24 Hours. Logon as "GUEST USER" with a password of "GUEST".

-Harry Knight

HINTS AND TIPS

by Leonard Lorden

Here is an article I am submitting for publication should you choose to run it. I'm sure someone can use this information...

I've discovered some neat little gimmicks over the years and thought I would pass them along to your readers.

I hear alot about someones power supply going out, and even screen flickering. I recently even had problems with my RS High-Res board providing some rather distracting flickering with almost 60% of the screen not displayed. I've come to discover, quite by accident, that a small power cable was the culprit to all these problems. There is a set of wires that originate from top left of the power supply board and plug into the motherboard at the center top of the circuitboard with a 90 degree connector. I don't know if the connector is just poorly designed, but I've replaced it twice and my latest one is

beginning to show symptoms of going out again. This is quite odd since I very rarely visit the insides of my Model 4. So if you start getting some weird effects with your computer, try wiggling those wires, you should see some effect on your screen if the connections are becoming frail. You can easily stick a toothpick, or other non-conducting object, between the vents on the top of your computer to wiggle these wires.

If you've been an 80'er for as long as I have, you probably have quite a collection of peripherals cluttering your desk. Unlike today's IBM machines, you can't just add a new card inside the computer, everything is a separate external device. I currently have only one 1/2 height 360K floppy in my M4, to boot-up my Tandy 35meg HD and to make occasional backups. This leaves me with three open drive spaces. One day I got the crazy notion to place my external modem into one of these open drive spaces. I have a SupraModem 2400, a rather small unit, which takes up only a portion of the drive opening. As luck would have it, my modems face fits ever so perfect into a 5 1/4" to 3 1/2" drive adapter. So mounting the adapter was a piece of cake and with a tie strap and a little jerry-rigging, the modem fit securely into the drive adapter. I also wanted to get rid of the external plug-in transformer for the modem and use one of the drive's power supplies, but unfortunately the modem works off of AC, as opposed to DC which is produced from the Model 4's power supply. I have an earlier Model 4 with the cassette port, so I pulled out the cassette port, which I never use anyway, and used it to put my phone and transformer wires through. The flat RS232 cable simply fits between the housing forms with no problems and goes to an A/B switch. And there you have it, an internal external modem with a professional finish, and you can still see your status lights and hit the power button. I don't recommend installing a modem with DIP switches that you have to adjust, as you'll need to open the computer every time you wish to alter them.

For anyone wishing to check out my IDIM BBS Host software available here at CN80, I have established a testing site where I can continue to write improvements and develop new programs for it. You may call

and see for yourself the user end of the software or see what new accessories I'm working on. Currently, I'm beta-testing a multi-player maze game which is already becoming a popular visit on the board. The BBS is called The Dead Zone and runs 24 hours a day at speeds up to 2400 baud. The phone number is (602) 884-4314, users will need to be validated before full access is granted on the board.

-Leonard Lorden

Hardware Corner

SHIPPING YOUR COMPUTER

Whether you are moving, shipping your computer to CN80 for repair, or shipping it to a new owner, there are some packaging and shipping tips that you should be aware of.

TRS80 Computers, Model I and especially Model III and 4s because of their construction design are particularly difficult to ship. Packaging for these computers require a fairly large carton, 25 by 25 inches square front and sides. And at least 21 inches high and they should be of the 275 or 300 cardboard shipping class. Most merchandise cartons are rated at 200 pounds. You will find the shipping class test weight printed on one of the flaps, usually in a round circle giving the manufacturer's name and etc. The 275 or 300 pound class means that the corners of the carton will withstand a greater crushing weight than the standard 200 pound class cartons. This extra strength protects the computer from being crushed if something heavy is stacked on top of it during shipping.

The best way to ship computers, printers and other peripherals is in their original shipping cartons, of course. Most manufacturers will have specially designed packaging material that protects the product inside better than any other packaging method. But how many of us still have the original shipping cartons? Many are quite large and take up a lot of space. You could have a basement or an attic full of empty

cartons by keeping just a few of the original shipping cartons, not only for your computer, but for the micro wave, VCR, CD player, electric stapler, etc. Creating a natural home for rodents, and creating a fire hazard. So what is the next best thing?

To properly protect any electronic device from damage there should be at least a two inch or more buffer zone on all six sides of the equipment and between the carton walls. Notice we said all six sides. Which includes the top and the bottom. You would be surprised how many do a great job of protecting all four sides of the computer from the carton walls, yet will have the computer sitting squarely on the bottom of the box, with little room under the top flaps. Which is a great way to have the case arrived cracked, because something heavy was placed on top of the carton, or the carton flipped and landed on its top.

Some of the best sources for these large cartons are the specialty shipping shops that seem to be available in almost every city these days. They not only provide packaging material, but are also UPS agents for shipping and postal parcel post stations too. We recommend using the United Parcel Service whenever you can for these large computers that weight about 45 pounds when packaged correctly. Another source for this type of packaging is your moving van offices, or U-Haul rental outlets, in fact we just received a shipment from an individual who used the U-Haul package, marked for use with Mico-wave ovens. It is just the right size and has hand holds cut in for lifting.

OK, so now we have a 275 pound class 24 x 24 x 24 inch square carton, now what do we do?

There are several packaging methods you can choose from, some good some not so good. Do not use crumpled newspaper as your packaging. Newspaper is good for only one impact, that is - one good bump and the paper is compacted even beyond what you can get by hand crushing it and it does not spring back to its orginal size. This leaves a void in the area surrounding the computer and will allow the computer to bump around inside the carton.

Plastic peanuts, or popcorn as it is usually

called is a better protection but it should only be used with other packaging material. It has a tendency to shake down on a trip due to the vibration caused by the trucks traveling out highways, once it has been shaken down it too can leave a void and allow the computer to shift within the carton. Whenever plastic popcorn is used you should always place a plastic bag over the computer to keep the popcorn particles from creaping into the drives and etc.

Plastic bubble wrap is the best packaging matenal if you don't have the original shipping carton with it's specially manufactured styrafoam packaging shapes. Choses a bubble size that will cushion your computer on all six sides, when wrapped with two or three layers wrapped side to side, and then with two or three layers wrapped front to back. Bubble wrap tightly applied, is a fairly strong protection in itself. Then place your wrapped computer in the carton and fill up the odd shaped holes with the styrafoam popcorn.

Be especially careful that there is nothing pressing on the monitor that would break it away from the case. The monitor is held to the case by four plastic bolts molded into the case, and it doesn't take much to break these four plastic bolts. When that happens the screen is pushed in and usually breaks the back of the tube beyond repair.

One person, who really should have known better recently sent us two Model 4 computers, even though he placed the computers in seperate boxes, he place an external disk drive in the space in front of the monitor, with no packaing save some manuals to fill up the hole. Needless to say the computer arrived with a broken monitor, and a severely damaged keyboard. The edges of the three ring manual binders plowed right across the keyboard shearing off half the keys. He did the same thing with the second computer. Packed heavy manuals and other material in the space in front of the monitor, again shearing off the keys of the keyboard. Sad to say they are both Model 4D green screen computers, and it will take a considerable amount of time to put them back into working order.

The best way to ship software or other items with your computer is to ship them in a separate cartons. Or if you must use the

space above the top of the computer and the top flaps of the carton, then pack your computer just as if the space on top of the computer was one separate carton area. Cut a large flat sheet of cardboard to form the bottom of that compartment and cushion the top of the computer, leaving the remaining space between the top of the computer and the top flaps of the box as separate compartment. And remember use this space for light bulky items, not heavy manuals and other materials.

Good judgement will get your computer shipped to arrive in good condition. Even though you insure your computer for enough to replace it if it is damaged in shipment, you may not be able to collect any of the insurance, if your packaging is found to be inadequate by the shipper.

MDRAW II Version 4

by Gary W. Shanafelt

Some of you may remember a brief mention of a program called MDRAW II in the August 1991 issue of this publication. It was a hi-res drawing program written by Scott McBurney, with enhancements by a number of people including myself. A new version -- version 4 -- is now out, with a few corrections of bugs and a lot of new features. In this article, I'd like to tell you about it.

First of all, some of the more worldly-wise readers may be wondering how I, as a co-author of the program, can possibly give you anything but a self-serving view of what it does. The obvious answer is that I probably can't, though I will try. But bear in mind that MDRAW isn't a commercial program that I'm trying to sell to anyone. It is freeware, and you can find it on disk M4HRZ23 of The File Cabinet. You may even find it on your local BBS in ARC format. In short, I'm not writing this to get you to buy the program (though to run it, you =do= have to buy a hi-res board if you don't already have one...)

So what does it do? The most obvious thing is that it allows you to draw freehand on the screen using the new serial mouse

drivers. So far, it is the only major program with full mouse support built into the code. (Some of the MicroLabs hi-res programs supported mice connected to a special card that plugged into the Model 4 expansion bus, but these cards are no longer available). The big advantage of a serial mouse is that it is cheap and not specific to a TRS-80: if you get a MS-DOS machine someday, the mouse will work just fine on it. You can also use the arrow keys to move the MDRAW cursor, but graphics really is an area (unlike word processing, for example) where a mouse is clearly the input device of choice.

In addition to freehand drawing, MDRAW II supports most standard features of hi-res drawing programs. You can draw circles, boxes, and lines. For a box, you hit "B", which causes a small box to appear on the screen. You use the mouse (or arrows) to enlarge it to the size you want, then click a mouse button to make it permanent. You can define blocks of graphics and move them to different places on the screen. You can flip the screen upside down or left-to-right; you can complement all the dots, making the image either black-on-white or white-on-black. If you don't like the way an image is centered, there is a command to shift the whole screen in any direction. You can load and save both HR and CHR formatted hi-res files. You can print text left-to-right or right-to-left, even sideways or up-and-down.

One of the main features of Scott McBurney's original program was its ability to print Dotwriter fonts on the screen. That is still there. You chose a font; the disk drive whirs and a box appears showing you where the first letter will appear. Then, you start typing. At any time, you can move the box with the mouse, so you can type text in straight lines or staggered staircases -- whatever positioning you want.

Version 4 now has a zoom mode. Hitting "Z" magnifies the section of the screen around the cursor for easy editing of individual pixels. Version 4 also supports multiple screen editing if you have 128k of memory, for a total of three screens at any one time. This feature allows you to load a file into one screen, toggle to the other, load a second file, and then move blocks of graphics between them. You can use one

backup screen as a work area, and the other periodically to save your current screen before making changes to it. You can also save blocks of images in hi-res format, then call them up at need and move them from screen to screen. Two PD hi-res files of icons are included on the disk. If you want more, Dale Hill has assembled three disks of HR icon files: they are disks HRPIC-- to HRPIC-- in The File Cabinet.

MDRAW II uses GBASIC's built-in @LPRINT command to send a completed screen to your printer. It defaults to standard Epsoms, but you can edit it for any of 10 types of dot matrix printers. If you have a Hewlett-Packard or compatible (I have a DeskJet), MDRAW II interfaces with a printing utility called HPPRINT/BAS, included on the disk. The latter will print your screen in any of three resolutions; you can vary the aspect ratio of the vertical dots from 1 to 9 and position the final image wherever you want it on a normal sheet of paper. While the GBASIC drivers print in landscape mode (across the length of a page), HPPRINT prints in portrait (widthwise) mode. I use it and MDRAW to print letterheads.

But don't throw away your current hi-res drawing program yet. (As I said above, I'm going to try to be objective). MDRAW has a lot of nice features and is quite easy to use thanks to Scott McBurney's original interface, but its virtues are achieved at a price. First, the bulk of MDRAW's code is written in GBASIC (some of the routines, like screen toggling, are in machine language). That means if you have a Radio Shack hi-res board, you'll need MicroLabs' special RS GBASIC to run it (it costs about \$30). Being in BASIC also means that some of the features are slower than they would be in a full machine-language program. Further, because of the way the mouse interface works, you need LS-DOS 6.3.x. TRSDOS won't work, even with GBASIC.

MDRAW also lacks some of the features you may take for granted in other drawing programs. While it draws circles, for example, it does not draw arcs or ovals. And the block move feature, though easy to use, does not support resizing or rotating (MicroLabs' Pro-Draw is invaluable when I need these functions). Some of this is because of memory limitations -- BASIC

takes a lot of memory -- and more features mean less memory for block moving. As it is, you can't block off more than about a fourth of the screen without running out of memory. It might be added that the Dotwriter feature is stunning -- but only if you own the original Dotwriter fonts. Dotwriter is no longer available, and there are not many Dotwriter fonts in the public domain (two PD fonts are included with the program; maybe someone out there could figure out how to convert Postmaster fonts to Dotwriter format?)

So that's MDRAW. For free (or the cost of the disk and handling), I think it's a pretty good value. If you want to use a mouse to draw on your hi-res board, this should keep you busy while we wait for David Goblen to complete his all machine-language mouse drawing utility!

-Gary Shanafelt

MY ADVENTURES WITH HARD DRIVES, PART 19

The Great NEWDOS80 Mystery SOLVED!
by Roy T. Beck

As faithful readers of this series in the July 1992 issue will remember, I related my problem in attempting to use a late hard drive controller with NEWDOS 80 V 2.5 in that issue, and asked for help from you readers. THE SYSTEM WORKS! I am happy to report that Garry Howarth of Narwee, Sydney, Australia read my request, and promptly dug the answer to the problem out of his files. My most sincere thanks to both Garry, and also to Greg, of Brisbane, Australia, who did the original research and problem solving. I'm sorry I can't properly credit Greg, but the article which Garry sent me did not contain Greg's last name, and Garry doesn't remember it, either. But Greg has thanks from all the NEWDOS users of the world who would like to run a late model Radio Shack hard drive under NEWDOS 80 V 2.5

As I studied Greg's analysis of the problem, I realized I was on the wrong track in my own guesswork, reported in my previous

article. In that essay, I said I thought the problem was in the variations in port usage between the old and new versions of the Radio Shack hard disk controller (HDC) board. Greg found the correct answer to be an error in the original APPARAT coding of HDFMTAPP/CMD, their hard drive formatter program. Apparently, the code was originally written with the intent of operating with either the old (large) or new (small) HDC. For whatever reason, the code was written incorrectly for the new HDC, and the old HDC didn't care. The result was the code worked OK for the old HDC's, but not for the new ones. Why didn't APPARAT catch and fix the bug? I dunno. A curious side effect of the original error was that the HDFMTAPP program, as written, writes to memory address 00CBh, which in a Model I, III or 4 does no harm, as that address is in ROM; but the Model 4P is a different story! The error could cause a one byte change in the ROM image in a 4P, which conceivably could be fatal!

In any event, Greg chased out the bug, and then developed and published the necessary 4 byte fix for other users of HDFMTAPP/CMD. Garry confirms the fix is correct, as he has done it and HDFMTAPP now works correctly on both his old Tandon 15 meg and his new Toshiba 44 meg drive. The fix, using SUPERZAP, is as follows:

DFS of file HDFMTAPP/CMD
FRS 1
MOD D1

change 4 bytes AF 32 CB 00
to 3E 0F D3 CB

That's all there is to it.

For those of you interested in the assembly language code, the original and corrected code is shown in the accompanying listing.

As you can see, there were actually two errors. First, the value of zero is wrong for the new HDC; second, the value was stuffed into memory at 00CBh, whereas it should have gone to port CBh, which is the port which addresses the HDC sector number register. Fortunately, the original code is 4 bytes long, and Greg was able to write the correct instructions in the same 4 bytes, so the patch is simple and elegant. The value f 15 is Western Digital's recommended >value

for the parameter which controls the number of fill bytes which form Gap 1 and Gap 3 when using 256 byte sectors. These are the spaces between headers, sectors, etc in the resulting magnetic tracks on the hard disks. I believe the zero value made the gaps too short for the hardware to respond correctly, hence no format.

I don't remember my history well enough to be sure, but it is entirely possible that APPARAT ceased to exist before the 4P came into existence in 1983. If that is indeed the case, then part of the answer about APPARAT's failure to catch the bug is that there were no Model 4P owners around to complain about modification of the ROM image when running in NEWDOS 80. Another question is, when did Radio Shack begin using the new HDC? The original erroneous code worked OK on the old, large HDC's, so APPARAT would not have received a complaint until the new, small HDC became available. I believe that came out with the 12 and 15 meg drives. A further area for inquiry is the 10 Meg drive that Apparat produced and sold. I have no information on what circuitry they used, so can only wonder how the incorrect code functioned on the APPARAT drive.

In conclusion, I am most pleased with Gary's quick response to my plea for assistance from all you readers. (I received his letter on July 18th). As I stated in the opening paragraph, the system really does work, by which I mean this (and other) newsletters provide a two way system of communication between all of us users. Of course, it is always pleasing to an author's ego to see his handiwork in print, but there is much more to it than that. There really is great satisfaction in providing helpful assistance to others, and I (and other authors) try to do that. Support your newsletters, they are valuable. Also, contribute both your questions AND your answers. Remember, style is less important than content. If your style needs fixing, publisher Stan Slater will take care of that.

-Roy T. Beck

(See Assembly Language listing mentioned in the above article at the beginning of the next page.)

Partial Listing of HDFMTAPP

```
AF      XOR A      ;zero A register
32 CB 00 LD (00CBh),A ;load memory
                        location 00CBh
```

The corrected code is:

```
3E 0F      LD A,0Fh      ;correct value
                        for HDC is 15d
D3 CB      OUT (0CBh),A ;load HDC sector
                        number register
```

-Roy T. Beck
2153 Cedarhurst Dr.
Los Angeles, CA 90027
213-664-5059 or 213-664-5056

ANSI-Term 4, A REVIEW

by Gary W. Shanafelt

A major strength of the TRS-80 is in terminal, or communication, programs. These allow you to connect with other computers or bulletin board systems (BBS's) through your modem. One thing that gives the TRS-80 its continued usefulness in a world of other computer systems is that, though the modem, they are all equal. You don't need an IBM to exchange data with another IBM; with the right software you can do this on your TRS-80 or even connect to a mainframe. There are standard protocols for transferring data -- XOFF/XON, XMODEM, KERMIT -- and TRS80 software supports them all. A number of university libraries including the one where I work have on-line catalogs, meaning you call them up on a computer to locate books. With Mel Patrick's FastTerm, in either its regular or VT100 emulation mode, I've been able to access every library catalog I've wanted to dial into, all from my lowly Model 4. And FastTerm, like other excellent terminal programs such as Bill Andrus' XT4, is freely available.

So with all the good Model 4 terminal programs out there, why should anybody write another one? There is no reason to do so unless you come up with something the current programs can't to -- and that is precisely what Richard VanHouten's new

ANSI-Term 4 does.

Most TRS-80 term programs support only normal ASCII codes. That is, they display the standard ASCII characters you see on your keyboard and they might display the 8-bit characters (128-255) built into the TRS-80. They don't access ANSI graphics. These include special codes to display different colors and put codes in different places on the screen. Usually, "ANSI graphics" from another computer also means the IBM character set for those codes from 128 to 255. The basic ANSI convention is supported if you have VT100 emulation, but there is no way a normal TRS-80 can display IBM special characters since they aren't built into the hardware.

So how do you connect to an IBM system if a TRS-80 can't display all those fancy codes? If you connect directly, you will get lines of garbage on your screen in short order. But you generally don't connect directly. Most IBM BBS systems give you the choice of ASCII or ANSI graphics. You choose the former and all the special codes that the TRS-80 can't handle are filtered out. But a lot of special effects the IBM users get are also filtered out... until ANSI-Term.

To get around the hardware limitation on those IBM special characters, ANSI-Term uses the Model 4 hi-res screen to display custom characters whose bitmaps are stored in the program itself. Because it is written in machine language, you don't need any special versions of BASIC -- the program will run on both the MicroLabs and the Radio Shack hi-res boards. It can also display 30 lines of text rather than the normal 24. This allows it to maintain ANSI standards and have some extra space at the bottom of the screen to display the main program settings. In addition to supporting the major ANSI codes (no, you can't get a color display with it!) it also supports the similar AVATAR standard.

ANSI-Term is a good example of how hi-res can be used for more than just drawing pretty pictures. You know you're running something special as soon as you start the program. You get an animation sequence of characters at the opening screen the likes of which has never before been seen (or could be seen) from a Model 4 terminal program.

And when you call an IBM system, you can now specify ANSI instead of ASCII graphics and find out what you've been missing. This doesn't mean just title displays: a number of systems support on-line games which require ANSI; these can now be played for the first time from a Model 4. VanHouten includes some sample ANSI screens from various IBM BBS's on the program disk to whet your appetite.

To better explain the practical differences between ASCII and ANSI, I'm including two screens from a local Abilene BBS where I live. The first is the display you get if you specify the ASCII display; the second, that for IBM/ANSI. They aren't very fancy, but they show you clearly how systems often include completely different graphics if you can display the ANSI codes. Both were recorded with ANSI-Term.

ANSI-Term is, in fact, a full-featured terminal program, not just a short module that can display ANSI. It supports standard communications parameters like full/half duplex, on/off echo, and all normal UART settings; auto-dialing from a phone directory of up to 100 entries; and XMODEM, 1k XMODEM, and YMODEM file transfer protocols. It also allows you to execute DOS commands (like getting a directory of a disk) from within the program, and to define keyboard macros (so that hitting one key will send out a multiple sequence of characters). When you order the program, you get a spiral-bound 6-page manual which explains all the features in detail. The author, incidentally, is a TRS-80 veteran in the field of Model 4 communications. You may already know him from utilities like DEARC/CMD and DEZIP/CMD, which extract files from popular archiving (compression) formats such as are often used in file transfers to minimize communication times (and costs). ANSI-Term's features and general interface reflect that experience.

ANSI-Term's main shortcoming is the flip side of its main virtue. Use of the Model 4 hi-res board allows it to display the IBM graphics codes, but the hi-res memory is notoriously slow. When you begin with an empty screen, the display moves rapidly. Slowdown occurs when the bottom line is reached and scrolling kicks in. At that point, it is hard to tell whether you're communicating at 2400 baud or 300. As is

explained in the accompanying manual, there is not much that can be done about this. It is a limitation of the hi-res board itself. There are things you can do, though, depending on the software being run by your host terminal. Some BBS user configurations allow you the option of scrolling the screen or clearing and starting at the top after a given number of lines. Always choose the latter. In general, avoid scrolling whenever possible (if you really get desperate, you can clear the screen manually with ANSI-Term's "Wipe" command).

Am I going to scrap FastTerm to run this program? Hardly. Do I feel I wasted my \$30 buying ANSI-Term? Hardly again. Each has features lacking in the other, and ANSI-Term now bridges a major compatibility gap between the Model 4 and the IBM mainstream. If you want those ANSI graphics and have a hi-res board, this is your program. I don't want them a lot, but when I do want them, now, thanks to ANSI-Term, I can get them. So can you.

-Gary Shanafelt

DATABASE MISCELLANY

by Helen Hillmann

Over eight years ago I purchased my TRS-80 and Superscript for word processing. I wanted to replace the use of a typewriter and besides it was the IN.....thing back in those days.

Little did I realize my equipment would grow much like Topsy....Now I have numerous programs and enough fileboxes to store over 350 disks....but where oh where....is the one I want!!!!.....At first, the only database that I could buy was Deskmate, (version 1.0.0)....that did a nice job of alphabetizing but when I stretched it too far I lost a lot of information and that was frustrating to say the least.

Recently, through CN 80 I was able to purchase Superlog. Carefully I went through my files that used some name to identify what was on a disk....With Superlog (a flat field...(?)...file) I can go to page zero and by using search, and with just a few key letters, can find what I want and where it is....the number of the filebox as well as the disk number.

-Helen Hillmann

Illustrations

JUST FULL LIVING COLOR MESSAGES / MAIL

* Ctrl-K(^K) / ^X aborts. ^S suspends ^Q resumes *
!!!! STORM SEASON IS HERE. MODEMS OFF HOOK DURING LIGHTENING !!!!

THIS BBS DOES NOT SUPPORT FULL SCREEN EDITING OF MESSAGES

EASIEST WAY TO READ MAIL IS "R space L enter" without the quotes. Keep hitting enter after each message read, or "A" to get back to main menu.....

```

-----#>>>      THE MAIL BOX MAIN MENU      <<<#-----
MAIL      SYSTEM      UTILITIES      ELSEWHERE ---
[Enter Messages] [B]ulletins [H]elp (or ?)
[Kill Messages]  [C]omment to Sysop  [J]iles (Sysop only,
[Personal Mail]  [G]oodbye           do not use, please)
[Read Messages] [Q]uit
[S]can Messages [U]tilities
[T]opic of Msgs [X]pert on/off (Makes menus invisible)

Current time: 5:07 PM Minutes remaining: 23 Security: 5

Press Any Key to continue
DUPLX: FULL ECHO: OFF CR=CR LIST: SCREEN ONLY ANSI
PARITY: NONE WORD: 8 PRINTER: OFF BUFFER: OFF BAUD RATE: 2400
  
```

Local Abilene BBS set to display only ASCII Codes.

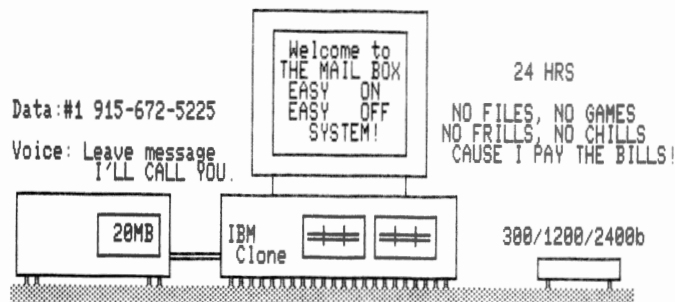
JUST FULL LIVING COLOR MESSAGES / MAIL

* Ctrl-K(^K) / ^X aborts. ^S suspends ^Q resumes *

Welcome to THE MAIL BOX
Dedicated to easy on....easy off MAIL ONLY

Your SYSOP is: ==MAC==

Data: #1 915-672-5225
Voice: Leave message I'll call you.



```

-----#>>>      THE MAIL BOX MAIN MENU      <<<#-----
Press Any Key to continue
DUPLX: FULL ECHO: OFF CR=CR LIST: SCREEN ONLY ANSI
PARITY: NONE WORD: 8 PRINTER: OFF BUFFER: OFF BAUD RATE: 300
  
```

Same BBS, same section, but now set to display ANSI graphics.

Supplied by Gary Shanafelt

Computer News 80
presents

by

Richard VanHouten

Ansiterm 4 Version 1.01 08/04/92 18:37:14
Copyright 1992 by Richard VanHouten

ANSI
DUPLX: FULL ECHO: OFF CR=CR LIST: SCREEN ONLY
PARITY: NONE WORD: 8 PRINTER: OFF BUFFER: OFF BAUD RATE: 2400

BBS Graphics,
supplied by Richard VanHouten

ZIPCD9/BAS Program Listing Number One by David Goben

```
10 '*****
20 'ZIPCODE BARCADE WRITER
30 'EPSON/PROPRINTER VERSION
40 '1992 by David Goben
50 '*****
60 CLS
70 PRINT"ZIPCODE - 2.0 - 9-Pin Envelope label printer with USPS bar code"
80 PRINT"Dot Matrix version (c) 1991 by David Goben. All rights reserved"
90 PRINT
100 CLEAR:DEFINT A-Z
110 ENVELOPE = 9.5 'envelope width in inches
120 HEIGHT = 4 'envelope height in inches
130 LPRINT CHR$(27)"@CHR$(27)"C"CHR$(HEIGHT*6);
140 ENV=ENVELOPE * 10
150 HT=HEIGHT * 6
160 ENVL= ENV / 2 - 17.5
170 SHORT=7:LONG=255
180 DIM DAT$(9),LN$(9)
190 FOR X=0 TO 9
200 READ DAT$(X)
210 NEXT X
220 DATA 11000,00011,00101,00110,01001
230 DATA 01010,01100,10001,10010,10100
240 '*** OPEN LABELS/ASC FILE ***
250 OPEN"I",1,"LABELS/ASC"
260 X=0
270 '*** READ A LABEL ***
280 IF EOF(1) THEN CLOSE 1:LPRINT CHR$(12);CHR$(27)"C"CHR$(66);:END
290 LINE INPUT#1,A$
300 IF A$=""THEN GOTO 280
310 LINE INPUT"Press <ENTER> to print next envelope: ";B$
320 PRINT:GOTO 340
330 IF EOF(1) THEN A$="" ELSE LINE INPUT#1,A$
340 LN$(X)=A$:X=X+1
350 IF A$<>""THEN GOTO 330
360 '*** PRINT LABEL ***
370 LPRINT STRING$(HT-10,10);
380 C=0:WHILE LN$(C)<>""
390 PRINT LN$(C):LPRINT SPACE$(ENVL);LN$(C):C=C+1
400 WEND:PRINT
410 LPRINT STRING$(2,10);
420 '*** PRINT USPS BAR ***
430 Z$=LN$(C-1)
440 GOSUB 470:PRINT:PRINT
450 GOTO 260
460 '*** FIND ZIPCODE IN Z$ ***
470 CODE$=""
480 IF INSTR(Z$, " ")=0 THEN PRINT"Cannot find Zip Code":END
490 Z=LEN(Z$):Z1=Z
500 WHILE MID$(Z$,Z,1)<>" ":Z=Z-1:WEND
510 Z2=Z1-Z:IF Z2<>5 AND Z2<>10 THEN PRINT"Invalid Zip Code":END
520 FOR X=Z+1 TO Z1
530 A$=MID$(Z$,X,1)
```

Cont'd on next page


```

540 IF (A$<"0" OR A$>"9") AND A$<>"-" THEN Z1=0:GOTO 510
550 NEXT X
560 ZIP$=MID$(Z$,Z+1)
570 '*** SEND BAR BEGIN CODE ***
580 Y=1:GOSUB 900
590 '*** INTERPRET EACH CODE FOR BAR ***
600 INDX=0:SUM=0
610 WHILE INDX<Z2
620 A$=MID$(ZIP$,INDX+1,1)
630 IF A$<>"-" THEN GOSUB 930
640 INDX=INDX+1
650 WEND
660 '*** SEND CHECKSUM ***
670 SUM=SUM MOD 10
680 A=10-SUM:IF A=10 THEN A=0
690 A$=CHR$(A+48)
700 GOSUB 930
710 '*** SEND BAR END CODE ***
720 Y=1:GOSUB 900
730 X=LEN(CODE$)*6
740 LPRINT SPACE$(ENVL);
750 LPRINT CHR$(27)"L"CHR$(X AND 255);CHR$(X\256);
760 FOR Z=1 TO LEN(CODE$)
770 LPRINT MID$(CODE$,Z,1);MID$(CODE$,Z,1);STRING$(4,0);
780 NEXT Z
790 LPRINT CHR$(27)"A"CHR$(8)
800 LPRINT SPACE$(ENVL);
810 LPRINT CHR$(27)"L"CHR$(X AND 255);CHR$(X\256);
820 FOR Z=1 TO LEN(CODE$)
830 LPRINT STRING$(2,128);STRING$(4,0);
840 NEXT Z
850 LPRINT CHR$(27)"J"CHR$(12);
860 LPRINT CHR$(12);
870 RETURN
880 END 'CHANGE TO RETURN IN YOUR CODE
890 '*** SEND A SINGLE BAR TO PRINTER ***
900 IF Y THEN Y=LONG:PRINT CHR$(149); ELSE Y=SHORT:PRINT CHR$(144);
910 CODE$=CODE$+CHR$(Y)
920 RETURN
930 B=ASC(A$)-48:SUM=SUM+B
940 FOR X=1 TO 5
950 Y=ASC(MID$(DAT$(B),X,1))-48
960 GOSUB 900
970 NEXT X
980 RETURN

```

ZIPCD24/BAS Program Listing Number Two by David Goben

```
10  '*****
20 'ZIPCODE BARCADE WRITER
30 'EPSON/PROPRINTER VERSION
40 '1992 by David Goben
50  '*****
60 CLS
70 PRINT"ZIPCODE - 2.0 - 24-Pin Envelope label printer with USPS bar code"
80 PRINT"Dot Matrix version (c) 1991 by David Goben. All rights reserved"
90 PRINT
100 CLEAR:DEFINT A-Z
110 ENVELOPE = 9.5 'envelope width in inches
120 HEIGHT = 4 'envelope height in inches
130 LPRINT CHR$(27)"@ "CHR$(27)"C"CHR$(HEIGHT*6);
140 ENV=ENVELOPE * 10
150 HT=HEIGHT * 6
160 ENVL= ENV / 2 - 17.5
170 SHORT$=CHR$(0)+CHR$(1)+CHR$(255):LONG$=STRING$(3,255)
180 SHORT=0:LONG=1
190 E$=CHR$(224)+STRING$(2,0)
200 DIM DAT$(9),LN$(9)
210 FOR X=0 TO 9
220 READ DAT$(X)
230 NEXT X
240 DATA 11000,00011,00101,00110,01001
250 DATA 01010,01100,10001,10010,10100
260 '*** OPEN LABELS/ASC FILE ***
270 OPEN"I",1,"LABELS/ASC"
280 X=0
290 '*** READ A LABEL ***
300 IF EOF(1) THEN CLOSE 1:LPRINT CHR$(12);CHR$(27)"C"CHR$(66);:END
310 LINE INPUT#1,A$
320 IF A$=""THEN GOTO 300
330 LINE INPUT"Press <ENTER> to print next envelope: ";B$
340 PRINT:GOTO 360
350 IF EOF(1) THEN A$="" ELSE LINE INPUT#1,A$
360 LN$(X)=A$:X=X+1
370 IF A$<>""THEN GOTO 350
380 '*** PRINT LABEL ***
390 LPRINT STRING$(HT-10,10);
400 C=0:WHILE LN$(C)<>""
410 PRINT LN$(C):LPRINT SPACE$(ENVL);LN$(C):C=C+1
420 WEND:PRINT
430 LPRINT STRING$(2,10);
440 '*** PRINT USPS BAR ***
450 Z$=LN$(C-1)
460 GOSUB 490:PRINT:PRINT
470 GOTO 280
480 '*** FIND ZIPCODE IN Z$ ***
490 CODE$=""
500 IF INSTR(Z$," ")=0 THEN PRINT"Cannot find Zip Code":END
510 Z=LEN(Z$):Z1=Z
520 WHILE MID$(Z$,Z,1)<>" ":Z=Z-1:WEND
530 Z2=Z1-Z:IF Z2<>5 AND Z2<>10 THEN PRINT"Invalid Zip Code":END
```

Cont'd on next page

```

540 FOR X=Z+1 TO Z1
550 A$=MID$(Z$,X,1)
560 IF (A$<"0" OR A$>"9") AND A$<>"-" THEN Z1=0:GOTO 530
570 NEXT X
580 ZIP$=MID$(Z$,Z+1)
590 '*** SEND BAR BEGIN CODE ***
600 Y=1:GOSUB 930
610 '*** INTERPRET EACH CODE FOR BAR ***
620 INDX=0:SUM=0
630 WHILE INDX<Z2
640 A$=MID$(ZIP$,INDX+1,1)
650 IF A$<>"-" THEN GOSUB 960
660 INDX=INDX+1
670 WEND
680 '*** SEND CHECKSUM ***
690 SUM=SUM MOD 10
700 A=10-SUM:IF A=10 THEN A=0
710 A$=CHR$(A+48)
720 GOSUB 960
730 '*** SEND BAR END CODE ***
740 Y=1:GOSUB 930
750 X=LEN(CODE$)*6
760 LPRINT SPACE$(ENVL);
770 LPRINT CHR$(27)"*!"CHR$(X AND 255);CHR$(X\256);
780 FOR Z=1 TO LEN(CODE$)
790 IF MID$(CODE$,Z,1)=CHR$(1) THEN A$=LONG$ ELSE A$=SHORT$
800 LPRINT A$;A$;STRING$(12,0);
810 NEXT Z
820 LPRINT CHR$(27)"3"CHR$(20)
830 LPRINT SPACE$(ENVL);
840 LPRINT CHR$(27)"*!"CHR$(X AND 255);CHR$(X\256);
850 FOR Z=1 TO LEN(CODE$)
860 LPRINT E$;E$;STRING$(12,0);
870 NEXT Z
880 LPRINT CHR$(27)"J"CHR$(30);
890 LPRINT CHR$(12);
900 RETURN
910 END 'CHANGE TO RETURN IN YOUR CODE
920 '*** SEND A SINGLE BAR TO PRINTER ***
930 IF Y THEN Y=LONG:PRINT CHR$(149); ELSE Y=SHORT:PRINT CHR$(144);
940 CODE$=CODE$+CHR$(Y)
950 RETURN
960 B=ASC(A$)-48:SUM=SUM+B
970 FOR X=1 TO 5
980 Y=ASC(MID$(DAT$(B),X,1))-48
990 GOSUB 930
1000 NEXT X
1010 RETURN

```

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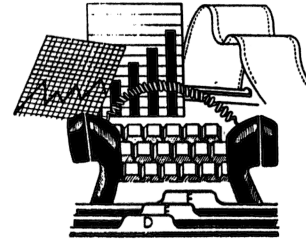
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Casper, WY 82609

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If you have an original application program disk that needs to be restored, send it and \$5.00 to cover the postage and handling. Please remember that it must be an original, legally owned by you, master disk. We will not restore copies of original program disks. There are many commercial games and other programs that we will not have in the archives, so it is best to call first and check.

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ANSITERM 4

by Richard VanHouten

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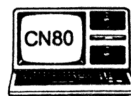
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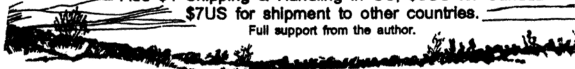
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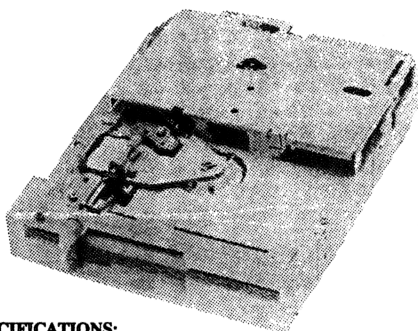
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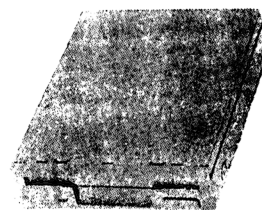
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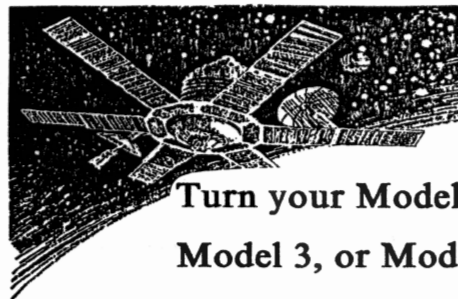


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Extender Cable for Model 4 with
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Introducing ED-IT for the Model 4 by Mark Allen Reed

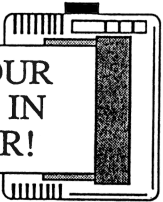
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Widget Sales (units)	000	0000	0000
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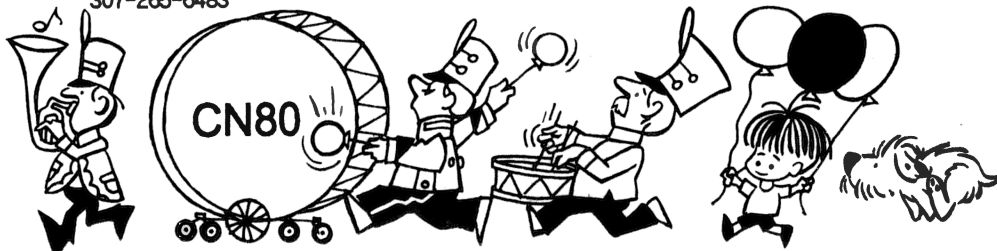
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DAVID'S MODEL 4 FILE UTILITIES

For TRSDOS/LS-DOS 6.x. Nine great file handling utilities to save you hours of work. DSPTXT: view ASCII files in forward and reverse, with word wrap, printed form setup, and inbedded graphics. INDEX4: list a disk's directory in alpha order -- add comments to describe them. ERASE: ensure data security -- totally erase all traces of a file from a disk. UNREMOVE: recovers file which have been removed via the REMOVE, KILL, or PURGE commands. SAVBAS: save an in-memory BASIC program after leaving BASIC. Plus many others. \$9

DAVID'S MODEL III LDOS FILE UTILITIES

Like above, but for LDOS 5.x. Contains eight utilities (SAVBAS not needed). Priced as above.

DAVID'S MODEL 4 SYSTEM UTILITIES

For TRSDOS/LS-DOS 6.x. 16 powerful system support utilities to streamline system maintenance. XMENDISK: the most powerful memdisk program going. XDRIVE: allows 1 drive to emulate 2. ONEPASS: the most powerful single-pass disk duplicator yet. VERDISK: verify the integrity of your disks. PRINT: control your printer from the DOS command level. Plus many more. \$16 \$3 S&H.

DAVID'S MODEL III LDOS SYSTEM UTILITIES

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T62DOSXT

Extends the dating capabilities on TRSDOS 6.2.x DOS disks to Dec 31, 1999 with full compatibility with older, pre 6.3 DOS dating formats, as well as the newer dating format for LS-DOS 6.3. Includes many optional system patches, plus numerous useful utilities. \$18

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1930'S MILLS
SLOT
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Want to see a real rendition of a working slot machine on your Model 4 computer screen? Then SLOT4 is the one that will do it. True revolving dials for payoff, moving handle, with coin dropping sound.

Amuse yourself and your kids for hours on end. Entertain your guests at your next party with your computer by letting them play SLOT4.

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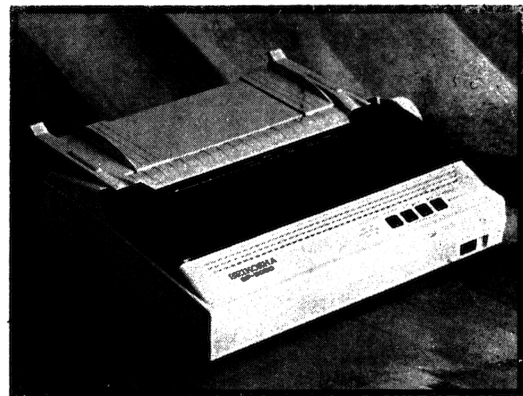
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Graphics 360 Resolution
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PostMaster

Computer News 80

PostMaster by David P. Miller is a program that lets you create Posters, Letterheads and Mailing Labels with icons, borders, and many different character fonts using your dot matrix printer. The program runs on TRS-80 Model 4/4P/4D, with 64K or 128K of memory that has a MicroLabs or Radio Shack high resolution board installed.

This program has received the highest praise from reviewers of any program ever written for the Model 4. It allows you to use thousands of icons, borders, and fonts that are available from the File Cabinet Icon Library, it also allows you to add your own icons, borders and fonts.

Printers supported: Radio Shack DMP-130, -130A, -131, -132, -133, -430, -2100P, also any Radio Shack DMP printer with a 3-digit number with "3" as the second digit. All Epson and IBM printers. All other dot matrix printers that are Epson and IBM emulation printers. Seiksha SP-2000, -2000Plus, -2400. Okidata Microline 182 and 192. Panasonic KX-P1091, -1092, -1124, nonsuffixed. Star 10X, -15X, -NP, -NX, LC-10. C-ITOH 1510, 8510, C-130. (Note - Dot Matrix printers providing 300-dpi or 180-dpi may not work with PostMaster and no guarantees can be made concerning them.

Printers that are not supported are: Radio Shack DMP-110, -120, -400, -500, -2100. Panasonic suffixed printers 1124i, 1124e, etc. Okidata 82, 92, and Daisy wheel printers.

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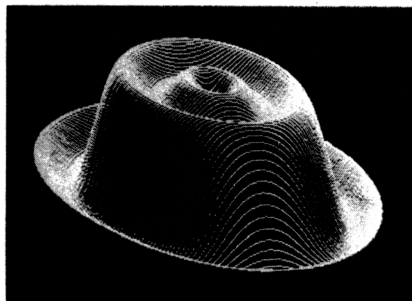
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Purchase a Grafyx Solution Hi-Res Graphics Board for \$ 99.00 and receive a free copy of DRAW a powerful graphics program which allows drawing or designs to be easily created on a Model III/4/4P/4D.

\$ 99.00 Add (Z) S&H

Specify Model 3, Model 4p,
Model 4 Gate Array, or
Model 4 Non Gate Array
when ordering. The boards
are different for each.
Please include phone number.



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PostMaster Program
Hi-Res Utilities Program
PostMaster Support Utilities
Five HiRes File Cabinet Volumes

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IDIM BULLETIN BOARD HOST SYSTEM by Leonard Lorden

IDIM (I did it my way) Bulletin Board Host System is a completely new software system written for the Model 4. It comes with a 22 page manual full of instructions on how to get started and three disks of programs for setting up your own bulletin board system, or upgrading your existing system. Many new operating features have been added to this bulletin board program by the author. For those who would like to review its features send \$2 to cover the cost of mailing and we will send you a copy of the manual for your inspection.

IDIM Bulletin Board Host System \$ 80, plus (Y) S&H.

2400 Baud External Modem

from Computer News 80

\$ 78

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LP III, V	26-1414	CN1003	FABRIC REFILL	4.79	4.29
LP VI/VIII, DMP 400/420	26-1418	CN1004	FABRIC CART.	5.60	5.10
LP VII, DMP 100	26-1424	CN1038	FABRIC CART.	6.00	4.50
DMP 110	26-1283	CN1005	FABRIC CART.	6.58	6.08
DMP130/130A/132/133/107	26-1236	CN1006	FABRIC CART.	6.40	5.90
DMP130/130A/132/133/107	26-1238	CN1007	FABRIC REFILL	5.00	4.50
DMP 500	26-1482	CN1008	FABRIC CART.	13.40	12.90
DMP 120, 200	26-1483	CN1009	FABRIC CART.	7.00	6.50
DMP 120, 200	26-1489	CN1010	FABRIC REFILL	4.85	4.35
DMP 430	26-1296	CN1013	FABRIC CART.	12.25	11.75
DMP 440	26-2809	CN1014	FABRIC CART.	19.30	18.80
DMP 2100, 2100P, 2110	26-1442	CN1015	FABRIC CART.	6.10	5.60
DMP 2100, 2100P, 2110	26-1442	CN1016	FABRIC REFILL	4.85	4.35
DMP 2120	26-2834	CN1017	FABRIC CART.	13.05	13.05
DMP 2120	26-2836	CN1018	FABRIC REFILL	7.90	7.40
DMP 2150	26-1287	CN1019	FABRIC CART.	8.00	7.50
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DWP II, DWP 410/510	26-1419	CN1021	M-S REFILL	4.50	4.00
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DWP 520, 230, 210	26-1458	CN1026	FABRIC CART.	5.60	5.10
DWP 520, 230, 210	26-1458	CN1027	FABRIC REFILL	4.80	4.30
DWP 220	26-1299	CN1028	MULTI-STRIKE CT.	7.95	7.45
DWP 220	26-1299	CN1029	M-S REFILL	3.60	3.10
DMP 300/2102	26-2819	CN1030	FABRIC CART.	7.15	6.65
DMP 300/2102	26-2819	CN1031	LONG LIFE CART.	6.85	6.35
ALPS ASP-1000	900-2326	CN1032	FABRIC CART.	6.60	6.10
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STAR MICRON, NX1000	900-2332	CN1037	FABRIC CART.	6.45	5.95
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Computer News 80 Product Guide

BACK ISSUES, INDEX, & REPRINTS

CN80 BACK ISSUES Individual Copies	\$ 4.00 (V)
Available from Vol 1 No. 1 January 1988	
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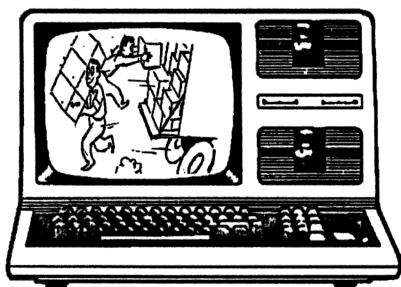
CN80 NEWCOMERS GUIDE VOL 1	\$ 7.95 (V)
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NUMBER 1	All the programs printed in Vol 1 No. 1 thru No. 6.
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NUMBER 3	All the programs printed in Vol 1 No.10, 11 and 12.
NUMBER 4	All the programs printed in Vol 2 No.1, 2 and 3.
NUMBER 5	All the programs printed in Vol 2 No.4, 5 and 6.
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NUMBER 12	All the programs printed in Vol 4 No. 1, 2, and 3.
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NUMBER 15	All the programs printed in Vol 4 No. 10, 11 and 12.
NUMBER 16	All the programs printed in Vol 5 No. 1, 2 and 3.
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CN80 Disk Series are \$5.00 each (V)

PLEASE NOTE: All CN80 DISK SERIES are on FLIPPY 5-1/4" disks; TRS/LS-DOS 6.3 format on Side 1 and TRSDOS 1.3 format on Side 2. Also available on 3-1/2" disks @ \$5.50 each (LSDOS 6.3.1 or LDOS 5.3.1 format only). Each Disk Series has Bonus programs.



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VOL. #	ISSUE	ADVERTISING DEADLINE	MAILING DATE
Vol. 5 #2	February - 1992	Jan. 13	Jan. 28
Vol. 5 #3	March	Feb. 10	Feb. 25
Vol. 5 #4	April	Mar. 16	Mar. 31
Vol. 5 #5	May	Apr. 13	Apr. 28
Vol. 5 #6	June	May 11	May 26
Vol. 5 #7	July	June 15	June 30
Vol. 5 #8	August	July 13	July 28
Vol. 5 #9	September	Aug. 10	Aug. 25
Vol. 5 #10	October	Sep. 14	Sep. 29
Vol. 5 #11	November	Oct. 12	Oct. 27
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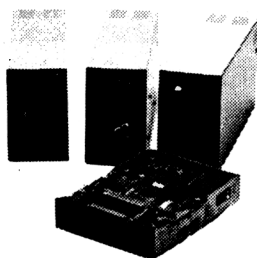
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